

Claims

1. A wavelength converter that is used in an optical communication system utilizing wavelength multiplexing, this wavelength converter for use in optical communications being characterized by the fact that the converter has a quasi-phase matched quartz crystal that has a second-order nonlinear effect, and a light coupling device that mixes the signal light and control light and inputs this mixed light into the quasi-phase matched quartz crystal.
2. The wavelength converter for use in optical communications according to Claim 1, which is characterized by the fact that the converter has a fiber amplifier that amplifies the output light from the quasi-phase matched quartz crystal.
3. The wavelength converter for use in optical communications according to Claim 1 or Claim 2, which is characterized by the fact that the converter has an optical filter that cuts the control light and the signal light that remains without being subjected to an optical conversion, on the emission side of the quasi-phase matched quartz crystal.
4. The wavelength converter for use in optical communications according to any one of Claims 1 through 3, which is characterized by the fact that the converter has fiber collimators disposed before and after the quasi-phase matched quartz crystal.

5. The wavelength converter for use in optical communications according to any one of Claims 1 through 4, which is characterized by the fact that the converter has means for controlling the direction of polarization of the light that is input into the quasi-phase matched quartz crystal.